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PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application: John Hathaway et al. Group Art Unit: 3727
Serial No.: 09/800,793 Examiner: Hylton, Robin A.
Filing Date: March 7, 2001 Docket No.: 18794-00044
Title: A Closure Having An Annular Sealing Band For Preventing Leakage Due
to Part Line Flash or Surface Mismatch

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Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

APPEAL BRIEF

Dear Sir:

This appeal is taken from the Examiner's final rejection dated July 20, 2004, for the above-identified application. All claims stand rejected. Appellants filed a timely Notice of Appeal under a certificate of mailing dated October 19, 2004. The U.S. Patent and Trademark Office ("USPTO") received the Notice of Appeal on October 22, 2004. Appellants are filing, in triplicate, this Appeal Brief within two months of USPTO receipt of the Notice of Appeal, and as such, only the Appeal Brief fee is due, \$500. Please charge our Deposit Account No. 12-0265 the \$500 Appeal Brief fee. Applicant believes no additional fees appear due. However, if any additional fees are required regarding the filing of this Response, please charge such fees to our Deposit Account No. 13-0265.

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I. Real Party in Interest

The real party in interest or owner of this patent application at the time of filing of this Appeal Brief is Rieke Corporation, a corporation of the state of Indiana, having a place of business at 500 West 7th Street, Auburn, Indiana 46706-2095.

II. Related Appeals and Interferences

No appeals or interferences known to the Appellants, Appellants' legal representative, or assignee will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

III. Status of Claims

Claims 1 and 2 are cancelled. Claims 3 through 14 are the claims to which the Appellants appeal. Claims 3 through 14 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the conventional closure disclosed in Appellants' application in view of U.S. Patent No. 1,842,226 to Williams ("Williams").

IV. Status of Amendments

Appellants have made no amendments to claims 3 through 14 after the Examiner's Final Rejection of July 20, 2004.

V. Summary of Invention

One type of closure and flange sealing mechanism commonly used in steel drum manufacturing involves using an elastomeric gasket positioned radially on a closure. The

closure is threaded into a flange, creating a seal gland between them. As the closure is initially threaded into the flange, the elastomeric seal easily starts into the gland. As the closure is threaded further into the flange, the gland becomes tighter causing the gasket to be compressed radially like a cork, creating an effective seal.

The generally accepted manufacturing method of producing plastic closures for use in this particular application requires the use of a split-block mold, which offers the opportunity for "parting line flash," otherwise referred to as parting line mismatch, to be created on the closure's radial sealing surface. The sharp edged surface created by the flash or mismatch is not an ideal sealing surface, and provides a potential leak path through the gland.

In an effort to improve the closure performance, closure manufacturers often perform a secondary operation on the closure when parting line flash or mismatch is present on the sealing surface. Secondary operations include machining the entire outer circumference of the closure sealing gland, or else removing the flash or mismatch through a secondary machining process. The present invention comprises a plurality of sealing rings placed on the diameter of a closure used to seal steel or plastic drums that utilize a diametric or cork style-sealing gasket. The lower rings (nearest the threads) bite into the gasket as the closure is threaded into the flange, thereby improving the seal. This is due to the radial compression that occurs to the seal as the closure is threaded into the flange. The upper rings cause the gasket to remain vertical so that it enters the gland in the proper orientation. Without the upper ring, the gasket can cock to one side or the other, and potentially be forced out of the gland as the closure is threaded into the flange, rather than becoming compressed within the gland. Also, the upper rings act as

additional sealing components, since they too are compressed into the gasket as the closure is tightened into the flange.

Claim 3 reads on a plastic closure 10 for threaded engagement with a container 50 and capable of engagement with a gasket 60 located between said plastic closure 10 and said container 50, the plastic closure 10 comprising, a cap portion 20, an annular side wall portion 30 beneath the cap portion 20 having part line flash or surface mismatch thereon, the annular side wall portion 30 comprising a top neck section 32, a threaded section 34 beneath the top neck section 32, and a bottom section 36 beneath the threaded section 32, and a plurality of annular sealing bands 40, 42 situated around the top neck section 32 of the annular side wall portion 30 through at least a portion of said part line flash or surface mismatch, whereby as the plastic closure 10 is threaded within the container 50, the sealing bands 40, 42 releasably engage the gasket 60, thereby improving the effectiveness of the gasket 60 and preventing leakage between said plastic closure 10 and said gasket 60 due to said part line flash or surface mismatch. In particular, your attention is directed to the specification at page 1, paragraph 14 through page 2, paragraph 18, and Figures 1 through 5 of the publication.

Claim 4 states the annular sealing bands 40, 42 have a sawtooth shape pointing upwards and outwards, for better engagement with the gasket 60. This is described in the specification at page 2, paragraph 18, lines 9-17 thereof, and Figures 2 through 5.

Claim 5 states the annular sealing bands 40, 43 have a top surface 41 and an angled surface 43, the angled surface 43 being angled upwards approximately 50 degrees from horizontal. This is described in the specification at page 2, paragraph 18, lines 9 through 14 thereof, and Figure 5.

Claim 6 states the top surface 41 of the annular bands 40, 42 is displaced downwards approximately 10 degrees from horizontal. This is described in the specification at page 2, paragraph 18, lines 9 through 12 thereof, and Figure 5.

Claim 7 states the annular sealing bands 40, 42 are integrally molded within the closure 10. This is described in the specification at page 2, paragraph 18, the last sentence thereof, and in Figures 1 through 5.

Claim 8 states the bottom section 36 of the annular side wall portion 30 is tapered for ready insertion with the container 50. This is described in the specification at page 1, paragraph 15, lines 7 through 9 thereof, and Figure 2.

Claim 9 reads on a plastic closure 10 capable of preventing leakage between a closure sealing surface 30 having part line flash or surface mismatch thereon and a gasket 60, said plastic closure 10 comprising, a cap portion 20, an annular sealing surface 30 extending below said cap portion 20 and having part line flash or surface mismatch thereon, and at least one annular sealing band 40, 42 extending radially outwardly from said annular sealing surface 30 and through at least a portion of said part line flash or surface mismatch, so that said at least one sealing band 40, 42 engages the gasket 60 so as to prevent leakage between said part line flash or surface mismatch and said gasket 60. This is described in the specification at page 1, paragraph 14 through page 2, paragraph 18, and Figures 1 through 5 of the publication.

Claim 10 states that said annular sealing band 40, 42 has a triangular cross-section so as to decrease the surface area at which the sealing band 40, 42 engages the gasket 60 thereby increasing the engagement force between the sealing band 40, 42 and the gasket

60. This is described in the specification at page 2, paragraph 18, lines 5 through 27 thereof, and Figures 2 through 5.

Claim 11 states closure 10 having a pair of annular sealing bands 40, 42 so as to prevent leakage between said part line flash or surface mismatch and said gasket 60. This is described in the specification at page 2, paragraph 18, lines 1 through 4 thereof, and Figures 2 through 5.

Claim 12 reads on an improved plastic closure 10 for engagement with a container 50 and capable of engagement with a gasket 60 located between said plastic closure 10 and said container 50 so as to prevent leakage between said plastic closure 10 and said gasket 60 due to part line flash or surface mismatch on the sealing surface 30 of said plastic closure 10, said plastic closure 10 comprising an annular sealing surface 30 having part line flash or surface mismatch, and at least one annular sealing band 40, 42 extending radially outwardly from said annular sealing surface 30 and capable of penetrating the gasket 60 so as to improve the effectiveness of the gasket 60. This is disclosed in the specification at page 1, paragraph 14 through page 2, paragraph 18, and Figures 1 through 5 of the publication.

Claim 13 reads on a plastic closure 10 capable of engagement with a gasket 60 for preventing leakage between a closure sealing surface 30 having part line flash or surface mismatch thereon and the gasket 60, said plastic closure 10 comprising a cap portion 20, an annular sealing surface 30 extending below said cap portion 20 and having part line flash or surface mismatch thereon, an annular threaded section 34 extending below said sealing surface 30 for engagement with a container 50, and a pair of annular sealing bands 40, 42 extending radially outwardly from said annular sealing surface 30 and

through at least a portion of said part line flash or surface mismatch, so that said at least one sealing band 40, 42 engages the gasket 60 so as to prevent leakage between said part line flash or surface mismatch and said gasket 60. This is disclosed in the specification at page 1, paragraph 14 through page 2, paragraph 18, and Figures 1 through 5 of the publication.

Claim 14 reads on a plastic closure 10 for threaded engagement with a container 50 and capable of engagement with a gasket 60 located between said plastic closure 10 and said container 50 so as to prevent leakage between said plastic closure 10 and said gasket 60 due to part line flash or surface mismatch on the sealing surface 30 of said plastic closure 10, said plastic closure 10 comprising, a cap portion 20 an annular sealing surface 30 extending below said cap portion 20 and having part line flash or surface mismatch thereon, an annular threaded section 34 extending below said sealing surface 30 for engagement with said container 50, and at least one annular sealing band 40, 42 extending radially outwardly from said annular sealing surface 30 so that when said plastic closure 10 is threaded within said container 50, said at least one sealing band 40, 42 engages the gasket thereby improving the effectiveness of the gasket 60. This is disclosed in the specification at page 1, paragraph 14 through page 2, paragraph 18, and Figures 1 through 5 of the publication.

VI. Issues

There is one issue before this Board of Appeals, whether claims 3 through 14 are unpatentable under 35 U.S.C. §103(a) over the conventional closure disclosed in Appellants' application in view of U.S. Patent No. 1,842,226 to Williams.

VII. Group of Claims

Claims 3 through 8 stand or fall together. Claims 9 through 11 stand or fall together. Claim 12 stands or falls alone. Claim 13 stands or falls alone. And, claim 14 stands or falls alone.

VIII. Argument

The Examiner rejects claims 3 through 14 under 35 U.S.C. §103(a) as being unpatentable over the conventional closure disclosed in Appellants' specification ("conventional closure") in view of Williams. The Examiner argues that "it would have been obvious to one of ordinary skill in the a[rt] at the time the invention was made to apply the teaching of at least one annular sealing band to the sealing surface of the conventional known closure disclosed by applicant as taught by Williams." The Examiner argues the motivation for doing so is to "correct for defects of the closure and associated container opening to provide a more reliable seal." As provided below Appellants believe the combination suggested by the Examiner is inappropriate and any resultant combination fails to teach all claim limitations.

Even though claims 3 through 8, claims 9 through 11, claim 12, claim 13, and claim 14 stand or fall alone, as stated above, all claims are rejected through an improper combination of references. Thus, Appellants' arguments provided below are equally applicable to each group of claims.

Improper Basis for Combining References

It is well established that the propriety of any rejection based upon 35 U.S.C. §103 obviousness grounds must focus upon whether “the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made.” Graham v. John Deere Co., 383 U.S. 1, 13; 148 USPQ 459, 465 (1966). To reject a claim as obvious under §103, an examiner must propose some suggestion or motivation, either in the references themselves or in the knowledge generally available to one skilled in the art to modify the reference or combine the reference teachings. MPEP §2143. The test cannot be met by simply saying that the basis for combining the references comes from common knowledge or is common sense. In re Lee, 277 F.3d 1338, 1343 (Fed. Cir. 2002).

The Examiner, however offers no factual evidence of suggestion or motivation to combine a conventional closure with Williams to teach the Appellants’ claimed invention. The Examiner’s only basis for combining the conventional closure with Williams is: “doing so would correct for defects of the closure and associated container opening to provide a more reliable seal.” This is nothing more than a conclusory statement that appears to suggest common sense as the basis for combining the references, which is improper.

The Examiner’s reasoning is not supported by the primary reference – the conventional closure. The conventional closure teaches removing part line flash from the sealing surface to correct for defects of the closure . Because the defects are removed from the conventional closure, there is no motivation or suggestion to improve the seal.

Therefore, combining the conventional closure with Williams is improper. Further, Appellants' claims **all** require part line flash or surface mismatch on the sealing surface to which the primary reference teaches away from and on which the secondary reference is silent. Again, making the combination of the conventional closure with Williams improper.

Hindsight Reconstruction

A critical step in analyzing the patentability of claims pursuant to §103(a) is casting the mind back to the time of the invention, to consider the thinking of one of ordinary skill in the art, guided only by the prior art references and the then-accepted wisdom in the field. In re Kotzab, 217 F.3d 1365 (Fed. Cir. 2000). Close adherence to this methodology is especially important in cases where the very ease with which the invention can be understood may prompt one to fall victim to the insidious effect of a hindsight syndrome wherein that which only the invention taught is used against its teacher. Id. Therefore, a rejection based on §103 must rest on a factual basis, with the facts being interpreted without hindsight reconstruction of the invention from the prior art and the applicant's disclosure. Grain Processing Corp. v. American-Maize Products, 840 F.2d 902, 907 (Fed. Cir. 1988).

Unfortunately, the Examiner here has fallen victim to "the insidious effect of hindsight syndrome." The Examiner argues combining the conventional closure in view of Williams " would correct for defects in the closure and associated container opening to provide a more reliable seal." This is hindsight reconstruction of the Appellants' invention. The Examiner has provided no facts to the Appellants to form a basis for

combining the conventional closure with Williams to suggest the Appellants' invention as claimed. As previously stated, Appellants' claims all require part line flash or surface mismatch on the sealing surface to which the primary reference teaches away from and on which the secondary reference is silent. The Examiner, therefore, is doing nothing more than using Appellants' invention to argue the combination would be obvious.

Fails to Teach All Claimed Limitations

To reject a claim as obvious under §103, an examiner must show that the prior art reference (or references when combined) teach or suggest all the claim limitations.

MPEP §2142. Presuming, however, that one skilled in the art would have been motivated to combine the conventional closure with Williams – a presumption that clearly cannot be made – the resultant combination would not teach or suggest all of the limitation of Appellants' claims. In particular, the resultant combination would teach a conventional closure **without** any part line flash or surface mismatch with an annular sealing band. Each and every claim of Appellants, however, requires part line flash or surface mismatch on the sealing surface and an annular sealing band.

Part line flash and surface mismatch occurs when using split-block molding. During molding, plastic seeps through the mold to create a protruding line, part line flash or surface mismatch. The sharp edged surface created by the flash or mismatch is not an ideal sealing surface, and provides a potential leak path through the gland. As is clear from Appellants' specification one skilled in the art faced with part line flash and/or surface mismatch would perform a secondary operation to remove it. Therefore, the conventional closure would no longer contain part line flash or surface mismatch.

Williams does not discuss any presence of part line flash or surface mismatch, especially being on the sealing surface. Williams only discloses a glass jar closure for preserving jars in which the seal is maintained by vacuum and the closure member has a rounded annular bead. Therefore, combining the conventional closure with Williams would result in a closure **not** having part line flash or surface mismatch, as required by each and every claim of Appellants. One skilled in the art would have merely taken the conventional closure with part line flash on the sealing surface and performed a secondary operation to remove it, not combine it with Williams. Therefore, one skilled in the art would have had no motivation or suggestion to use a sealing band to solve part line flash sealing problems. It was solved by the secondary operation.

In light of the foregoing, Appellants contend that the Examiner's rejection of claims 3 through 14 under 35 U.S.C. §103(a) is improper, and that claims 3 through 14 are in condition for allowance. Therefore, Appellants respectfully request the present application be remanded to the Examiner for allowance of claims 3 through 14, or for an additional search.

Respectfully submitted,

Date: Dec. 22, 2004

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IX. Appendix

1. (cancelled)
2. (cancelled)
3. A plastic closure for threaded engagement with a container and capable of engagement with a gasket located between said plastic closure and said container, the plastic closure comprising:
 - a cap portion,
 - an annular side wall portion beneath the cap portion having part line flash or surface mismatch thereon, the annular side wall portion comprising a top neck section, a threaded section beneath the top neck section, and a bottom section beneath the threaded section, and
 - a plurality of annular sealing bands situated around the top neck section of the annular side wall portion through at least a portion of said part line flash or surface mismatch, whereby as the plastic closure is threaded within the container, the sealing bands releasably engage the gasket, thereby improving the effectiveness of the gasket and preventing leakage between said plastic closure and said gasket due to said part line flash or surface mismatch.
4. The closure as in claim 3, wherein the annular sealing bands have a sawtooth shape pointing upwards and outwards, for better engagement with the gasket.

5. The closure as in claim 4, wherein the annular sealing bands have a top surface and an angled surface, the angled surface being angled upwards approximately 50 degrees from horizontal.
6. The closure as in claim 5, wherein the top surface of the annular bands is displaced downwards approximately 10 degrees from horizontal.
7. The closure as in claim 3, wherein the annular sealing bands are integrally molded within the closure.
8. The closure as in claim 7, wherein the bottom section of the annular side wall portion is tapered for ready insertion with the container.
9. A plastic closure capable of preventing leakage between a closure sealing surface having part line flash or surface mismatch thereon and a gasket, said plastic closure comprising:
- a cap portion;
 - an annular sealing surface extending below said cap portion and having part line flash or surface mismatch thereon; and
 - at least one annular sealing band extending radially outwardly from said annular sealing surface and through at least a portion of said part line flash or surface mismatch, so that said at least one sealing band engages the gasket so as to prevent leakage between said part line flash or surface mismatch and said gasket.

10. The closure of claim 9 wherein said annular sealing band has a triangular cross-section so as to decrease the surface area at which the sealing band engages the gasket thereby increasing the engagement force between the sealing band and the gasket.

11. The closure of claim 10 having a pair of annular sealing bands so as to prevent leakage between said part line flash or surface mismatch and said gasket.

12. An improved plastic closure for engagement with a container and capable of engagement with a gasket located between said plastic closure and said container so as to prevent leakage between said plastic closure and said gasket due to part line flash or surface mismatch on the sealing surface of said plastic closure, said plastic closure comprising:

an annular sealing surface having part line flash or surface mismatch; and

at least one annular sealing band extending radially outwardly from said annular sealing surface and capable of penetrating the gasket so as to improve the effectiveness of the gasket.

13. A plastic closure capable of engagement with a gasket for preventing leakage between a closure sealing surface having part line flash or surface mismatch thereon and the gasket, said plastic closure comprising:

a cap portion;

an annular sealing surface extending below said cap portion and having part line flash or surface mismatch thereon;

an annular threaded section extending below said sealing surface for engagement with a container; and

a pair of annular sealing bands extending radially outwardly from said annular sealing surface and through at least a portion of said part line flash or surface mismatch, so that said at least one sealing band engages the gasket so as to prevent leakage between said part line flash or surface mismatch and said gasket.

14. A plastic closure for threaded engagement with a container and capable of engagement with a gasket located between said plastic closure and said container so as to prevent leakage between said plastic closure and said gasket due to part line flash or surface mismatch on the sealing surface of said plastic closure, said plastic closure comprising:

a cap portion;

an annular sealing surface extending below said cap portion and having part line flash or surface mismatch thereon;

an annular threaded section extending below said sealing surface for engagement with said container; and

at least one annular sealing band extending radially outwardly from said annular sealing surface so that when said plastic closure is threaded within said container, said at least one sealing band engages the gasket thereby improving the effectiveness of the gasket.



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